

U.S. Pat. App. Ser. No. 10/781,578
Att. Docket No. 10191/3521
Reply to Final Office Action of 01/12/06

Amendments to the DRAWINGS:

Please amend without prejudice the Drawings by replacing them with the three Replacement Sheets for Figures 1 to 3. The text has been increased in size and is believed to be legible. No new matter has been added and support is provided by the specification. Approval and entry are respectfully requested.

REMARKS

Claims 18 and 19 are added, and therefore claims 1 to 19 are now pending.

With respect to paragraph one (1) of the Final Office Action, the Drawings were objected to because the wording was assertedly unclear. Accordingly, please amend without prejudice the Drawings by replacing them with the three Replacement Sheets for Figures 1 to 3. The text has been increased in size and is believed to be legible. No new matter has been added and support is provided by the specification. Approval and entry are respectfully requested. It is therefore respectfully requested that the objections be withdrawn.

With respect to paragraph nine (9), Applicants thank the Examiner for allowing claims 7 to 9 and 13 to 15.

With respect to paragraph two (2), claims 1 to 6, 10 to 12, 16 and 17 were rejected under 35 U.S.C. § 102(b) as anticipated by Wang, U.S. Patent No. 6,886,410.

It is believed that this reference is a mistake, and it is believed that the Examiner meant to refer to U.S. Patent No. 6,298,718, which is also to Wang. In particular, U.S. Patent No. 6,886,410, as cited, was presumably confused with U.S. Patent No. 6,298,718 which has been involved in the procedure up to now and which is concerned with a pressure sensor -- and not with a compressor pressure ratio, as provided for in the claimed subject matter. Consequently, with regard to U.S. Patent No. 6,886,410, the rejections of the Office Action are believed to be in error. Also, this document has an application filing date of 12/30/2003, whereas the effective priority filing date of the present application is 02/20/2003.

To the extent that the Examiner is now asserting the Wang '410 patent for the first time, it is respectfully requested that the finality of the Final Office Action be withdrawn, so that applicants may have a proper opportunity to address it and to file a certified English translation of the German priority application to antedate the Wang '410 reference.

As regards the anticipation rejections of the claims, to reject a claim under 35 U.S.C. § 102(b), the Office must demonstrate that each and every claim feature is identically described or contained in a single prior art reference. (*See Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991)). Still further, not only must each of the claim features be identically described, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention;

namely the claimed subject matter of the claims, as discussed herein. (See *Akzo, N.V. v. U.S.I.T.C.*, 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986)).

As further regards the anticipation rejections, to the extent that the Office Action may be relying on the inherency doctrine, it is respectfully submitted that to rely on inherency, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics *necessarily* flows from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; and see *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Int’f. 1990)). Thus, the M.P.E.P. and the case law make clear that simply because a certain result or characteristic may occur in the prior art does not establish the inherency of that result or characteristic. Accordingly, it is respectfully submitted that any anticipation rejection premised on the inherency doctrine is not sustainable absent the foregoing conditions.

While the rejections may not be agreed with, to facilitate matters, claims 1 and 17 have been rewritten, to facilitate matters. Claims 2 and 3 have been rewritten to conform to claim 1 as presented.

In particular, each of independent claims 1 and 17 now provide that the measured actual pressure ratio is compared with a modeled actual pressure ratio (and a setpoint pressure ratio that is to be set in the case of new claims 18 and 19, as explained below). Claims 2 and 3 have been rewritten to conform to claim 1 as presented.

The Final Office Action asserts that it is known from column 6, lines 8 to 10 of the “Wang” reference that the specified reference value is a modeled current compressor pressure ratio. In this context, in column 6, lines 8 to 10 of the “Wang” reference, the important aspect is calibrating the pressure threshold values as a function of specific engine operating parameters. In this context, the important aspect at this place is not values of the pressure ratio, but of the pressure itself, since the object is to diagnose the boost pressure sensor, as is discussed in column 6, lines 1 to 7 of the “Wang” reference. The pressure threshold values mentioned in column 6, lines 8 to 10, have nothing to do with a compressor pressure ratio, as provided for in the context of claims 1 and 17 as presented..

Finally, the modeling of the actual pressure ratio is not identically disclosed (and cannot even be inferred) from the “Wang” reference.

Accordingly, claims 1 and 17 (and their respective dependent claims) are allowable for these reasons alone.

In particular, the “Wang” reference refers to a turbocharger-compressor diagnostic system, in which an abnormal operation of the turbocharger-compressor is detected. For this purpose, data are read out from a plurality of sensors. In the process, first a series of plausibility tests are performed on the basis of the sensor data. These tests are used in deciding whether the data provided by the sensors are precise or faulty. If a particular sensor does not pass the plausibility test, an error signal is generated. If all sensors pass the plausibility tests, however, then the performance data of the compressor are compared to a characteristics map for the compressor operation. If the compressor operation falls into either the surge or choke region of the characteristics map, then a signal is generated indicating an abnormal performance. (See Abstract).

To test the abnormal operation of the compressor, a test is performed as to whether in a current air mass flow the associated compressor pressure ratio falls into the shaded region indicated in Figure 8. Outside of this region are the surge and choke regions and an abnormal operation is detected which has the consequence that the engine control must change the engine operation parameters in such a way that the compressor again operates in the shaded region of Figure 8 (“Wang” reference, col. 3, lines 16 to 23; and col. 9, lines 30 to 38).

Thus, to diagnose an abnormal operation of the compressor for the subject matter of the “Wang” reference, the current compressor pressure ratio is compared with the two boundary lines 120, 121 of Figure 8. Outside of the shaded region represented by the boundary lines 120 and 121 in Figure 8, the compressor itself does not operate in a faulty manner, but merely in an undesired operating range of the internal combustion engine, in which the resulting compressor performance has the consequence of either surging or choking the compressor and is thus undesired.

In contrast, with the claimed subject matter of claims 1 and 17, as presented, the measured actual pressure ratio is compared to a modeled actual pressure ratio. Thus, the claimed subject matter of claims 1 and 17, as presented, is not concerned with testing whether the measured actual pressure ratio falls into a desired operating range, but rather to test whether the measured actual pressure ratio reaches a desired target value or corresponds to a value that is expected on the basis of a modeling.

It cannot be established based on the results of the comparison whether the compressor performance falls into an operating range in which there is surging or choking. Instead, based on the described measures it may be established whether the compression itself operates in a faulty manner -- that is, whether it is able to set a desired value or an expected

value. Thus the claimed subject matter and its objective is different than and is not identically disclosed by (or even suggested by) the subject matter of the "Wang" reference.

In particular as to claim 3, the Office Actions to date have referred to column 6, lines 8 through 10, which assertedly provides that pressure threshold values may be calibrated as a function of the specific engine operating parameters. The cited passage deals with pressure threshold values and -- contrary to the claimed subject matter -- not with an actual pressure ratio across the compressor, let alone the modeling of such an actual pressure ratio.

Thus, in contrast to the claimed subject matter of claims 1 and 17 as presented, the system of the applied reference does not make possible a diagnosis of a faulty function of the compression, but rather is apparently only intended to establish in which operating range the compressor is working and possibly to modify the operating conditions of the internal combustion engines so that the compressor operates in a desired operating range.

Thus the "Wang" reference does not identically describe (or even suggest) the features of *comparing the measured actual pressure ratio with a modeled actual pressure ratio, and detecting an error as a function of a result of the comparing*, as provided for in the context of claims 1 and 17 as presented.

Accordingly, claims 1 and 17 as presented are allowable.

Claims 2 to 6, 10 to 12 and 16 depend from claim 1 as presented, and are therefore allowable for the same reasons as claim 1 as presented.

It is therefore respectfully requested that the anticipation rejections be withdrawn.

New claims 18 and 19 do not add any new matter and are supported by the present application, including the specification. Claims 18 and 19 are like claims 1 and 17, except that a pressure ratio point that is to be set is compared (instead of the modeled actual pressure ratio, as in claims 1 and 17).

In particular, as to new independent method claim 19 and new independent device claim 18, the measured actual pressure ratio is compared to a setpoint pressure ratio that is to be set. The Office Action compares the threshold value of the "Wang" reference (column 6, line 18) to the setpoint pressure ratio that is to be set (as in new independent method claim 19 and new independent device claim 18). The specified threshold values of the "Wang" reference define different operating ranges of the compressor which are characterized, for example, by compressor pumps or compressor stalling. Therefore one is not able to detect from this a faulty operation of the compressor, but only an operation of the compressor in an undesired operating range, the compressor itself being able to work in a thoroughly error-free

manner. In contrast, in the subject matter of new independent method claim 19 and new independent device claim 18, the measured actual pressure ratio is compared to the setpoint pressure ratio that is to be set -- that is, to the pressure ratio that is to be set by the compressor. This is the desired compressor pressure ratio. The threshold values in column 6, line 18, of the "Wang" reference, however, do not represent any compressor pressure ratio that is to be set by the compressor. The threshold values are only used to distinguish in which operating state the compressor just happens to be working (see also column 9, lines 24 and 25, as well as lines 30 to 32).

The Office Actions to date refer to column 6, lines 15 through 18 of the "Wang" reference, which assertedly provides that the compressor pressure ratio is compared to specified threshold values. The specified threshold values in this instance, according to the Office Action, supposedly correspond to the desired pressure ratio to be set according to the feature of claim 2. But the threshold values are, for example, the boundary lines 120 and 121 in Figure 8 or the boundary lines 105 and 106 in Figure 6. These boundary lines merely define the operating range desired for the operation of the compressor or not desired for the operation of the compressor, but, in contrast to claimed subject matter, they do not represent a pressure ratio point that is to be set by the compressor, as provided for in the context of claims 18 and 19.

Still further, as in the subject matter of the method claims 1 and 19 and of independent device claims 17 and 18, the measured actual pressure ratio is compared to a modeled actual pressure ration (claims 1 and 17) or to a setpoint pressure ratio that is to be set (claims 18 and 19), in contrast to the subject matter of the "Wang" reference. It cannot be derived from this whether the compressor is working in a desired or an undesired operating range, but it can be determined by this comparison whether the operation of the compressor itself, that is, independently of the present operating range of the compressor, is in error or not. However, such an error diagnosis is not possible in the case of the subject matter of the "Wang" reference.

What is decisive in this connection is that, counter to the comments of the Office Action, the modeled actual pressure ratio (of claims 1 and 17) and the setpoint pressure ratio that is to be set (of claims 18 and 19), have nothing to do with the threshold values for the compressor pressure ratio of the "Wang" reference, so that completely different consequences arise from the comparison of the measured actual pressure ratio to the threshold value of the

"Wang" reference, and from the comparison of the measured actual pressure ratio to the modeled actual pressure ratio (of claims 1 and 17) or the setpoint pressure ratio that is to be set (of claims 18 and 19), according to these independent claims.

Therefore, the subject matter of the independent claims 1, 17, 18 and 19 is neither anticipated (nor made obvious) by the "Wang" reference.

Accordingly, claims 18 and 19 are allowable for these reasons.

It is therefore respectfully submitted that all of claims 1 to 6, 10 to 12 and 16 to 19 are allowable – like allowed claims 7 to 9 and 13 to 15.

Conclusion

In view of the foregoing, it is believed that the objections to and the rejections of the claims have been obviated, and that claims 1 to 6, 10 to 12, and 16 to 19 are therefore allowable – like allowed claims 7 to 9 and 13 to 15. It is therefore respectfully requested that the objections and rejections be withdrawn, and that the present application issue as early as possible.

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Respectfully submitted,
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